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ABSTRACT

This paper examines the impact of 12 hours of exposure to Rational Behavior Training (RBT) and 10 days of exposure to a controlled conflict situation within a wilderness environment on 30 high school students. Results indicate that the treatment group, when compared with a control group, showed a marked and statistically significant reduction in irrational personality traits and intra-interpersonal needs. These results suggest that members of the treatment group as compared to the control group are viewing themselves as more rational human beings and are better prepared mentally to cope more rationally with their intra-interpersonal environments. (Author)

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Reducing Irrational Personality Traits, Trait Anxiety, and Intra-Interpersonal Needs In High School Students[1]

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Reducing Irrational Personality Traits, Trait Anxiety, and Intra-Interpersonal Needs In High School Students

This study examines the impact of twelve hours of exposure to Rational Behavior Training (Maultsby 1971, 1974, 1975) and ten days exposure to controlled conflict situations within a wilderness environment on thirty ninth, tenth, and eleventh grade students participating in an E.S.E.A. Title III-IVC funded Innovative Educational Experiment (Project SELF, 1975). Specifically, the study examines the magnitude of learner change evidenced by students participating in Project SELF.

Rational Behavior Training is a systematic and highly directive method of teaching high school students how to increase their skills in problem solving so that they are better equipped to cope with problems and stresses of daily living. The training also teaches students the insight that they have control of their emotional well being if they are willing to analyze and extinguish irrational thoughts that contribute to unwanted and prolonged negative feelings. Rational Behavior Training teaches students to think and behave in rational ways that lead them to: examine situations objectively, act in life preserving ways, achieve desired goals, resolve or minimize intra-interpersonal conflicts.

Writings by Maultsby (1971, 1974, 1975), Spielberger (1970, 1972, 1975) and Ross (1975) suggest that students participating in conflict resolving experiences would evidence reductions in irrational personality traits, trait anxiety, and intra-interpersonal needs. It was assumed that changes on these three dependent variables would address the more global question; to what degree are those who participated in Project SELF viewing themselves as more rational human beings and relating more rationally within their intra-interpersonal environments?

METHODS AND PROCEDURES

Treatment Intervention

Subjects, in groups of ten, were first introduced to the concepts and principles of Rational Behavior Training (RBT), (Maultsby, 1971). In twelve classroom hours the students learned: the anatomy of an emotion, who or what controls their emotions, how to thoughtfully analyze problems and conflicts (rational self-analysis), and how to apply the concepts of rational thinking to problems and conflicts. Then, based on the principle that far more is learned from direct experience than from books, the subjects were immersed in a wilderness experience for ten days.

The ten day wilderness experience provided the subjects an opportunity to employ their newly learned principles of RBT under the tutelage and guidance of two skilled teachers. The two adults actively interacted with and challenged the participants to rationally deal with a multitude of planned and unexpected conflicts resulting from living and working together in an unfamiliar wilderness environment for an extended period. Key to the learning experience was a series of campfire meetings held at the end of each day of the trip. Time was spent around the campfire exploring rational solutions to such conflicts as: rationing and preparing food, building shelters, enduring physical and emotional fatigue, providing for basic human needs, and establishing group relationships.

Subjects

Experimental and control groups were selected from a population of 238 students applying for the program. Applicants were in the ninth, tenth or eleventh grade at two target high schools, had volunteered for the program, and had received parental permission to participate in the program and had agreed to undergo a physical if selected.

The 238 applications were stratified by school, race, sex, and grade level. Stratification insured a cross-sectional representation of students from the parent population (initial 238 applicants). Subjects were then chosen from each strata in proportion of the strata to the total population via simple random sampling. In total, 60 students were selected. Subjects within strata were then randomly assigned to an experimental and a control group consisting of 30 subjects each.

In total, the experimental and control samples consisted each of thirteen ninth graders, ten tenth graders, and eight eleventh graders. Fourteen subjects in each group were female and sixteen subjects were male. Two black students received the treatment. Fall semester grades (1974) for the experimental subjects ranged from 1.6 to 4.0 (Mdn=2.45) and fall semester grades for the control subjects ranged from 1.5 to 4.0 (Mdn=2.98). Otis-Lennon IQ scores ranged from 77 to 132 (Mdn=105.5) for the experimental group and ranged from 79 to 144 (Mdn=114.75) for the control group.

Design

Brody (1972) suggests four essentials in assessing the effects of therapeutic interventions: a control group, multiple criteria of effectiveness, measure of behavior outside the therapeutic situation, and follow-up measures. This study incorporates all but one of Brody's suggestions (measure of behavior outside the therapeutic situation). A pretest, immediate post test, and delayed post test control group design was employed to examine immediate and delayed effects of the treatment. Participants, as well as a control group, were tested prior to treatment intervention, immediately following intervention, and six months following treatment intervention. Use of this type of design controls for threats to internal validity, as explained by Campbell and Stanley (1963), but threats to external validity, specifically, interaction of testing and treatment could limit the external validity of the results.

Instrumentation

Three instruments were used to measure the three dependent variables. The Irrational Personality Trait Inventory (IPTIS) (Maultsby, 1971), consists of 137 clinically derived items which indicate "irrational personality traits which can account for unhappiness in the daily lives of normal people." The Spielberger (1970) Trait Anxiety Scale (STAI) consists of 20 items that measure levels of trait anxiety in normal people that could lead to "anxiety proneness" and possible "neurotic problems" in one's daily life. The Student Needs Questionnaire (SNQ), Ross (1975), consists of 54 items which "differentiate the degree to which certain felt needs exist in the intra-interpersonal lives of high school students."

Internal consistency measures of each test, Cronbach's alpha, were .95, .86, and .94 respectively (n=216). One week test-retest reliability coefficients were .80, .82 and .85, respectively (n=75).

Analysis

A univariate analysis of covariance (Kerlinger and Pedazur, 1973) using the pretest as a covariate was calculated on each of the three dependent variables for both the immediate post testing and delayed post testing occasions. Since three separate univariate analyses of covariances were calculated for each post testing occasion, a low alpha level ($p < .01$) was used to correct for the increased level of probability of making a Type II error that occurs when testing several hypotheses in succession. Practical or educational significance was examined by calculating the proportion of students who dropped at least one standard deviation or more on each of the three dependent variables.

RESULTS

Tables I, II, and III report the effects of the treatment intervention (summary of the univariate analysis of covariance) from the first post testing for each dependent variable. Tables IV and V report the first post test means and standard deviations and the adjusted post test means and standard deviations for the experimental and control group on each dependent variable. Table VI reports the percentage of students in the experimental and the control group dropping one standard deviation or more on each of the three dependent variables.

Insert Tables I-I7 about here

As evident from Table I, effects from the first post testing indicated that the treatment group, when compared with the control group, showed a marked and statistically significant decrease in irrational personality traits ($F = 28.72$, $p < .01$). The treatment group also showed a decrease (see Tables II and III) in trait anxiety ($F=5.69$, $p < .05$) and intra-interpersonal needs ($F=4.95$, $p < .05$), but the level of significance for these variables falls short of the criteria set for the experiment ($p < .01$). Seventy percent of the experimental group dropped one standard deviation or more on the IPTIS, 46.6% dropped one standard deviation or more on the STAI, and 43.3% dropped one standard deviation or more on the SNQ (see Table VI). Six percent of the control group dropped one standard deviation or more on the IPTIS, 16.6% dropped one standard deviation or more on the STAI, and 30% dropped one standard deviation or more on the SNQ.

Tables VII, VIII, and IX report the delayed effects of treatment intervention (summary of the univariate analysis of covariance) for each dependent variable. Tables X and XI report the delayed post test means and standard deviations and adjusted post test means and standard deviations for the experimental and control group on each dependent variable. Table XII reports the percentage of students in the experimental and control group dropping one standard deviation or more on the delayed post test for each of the dependent variables.

Insert Tables VII-XII about here

As evident from the tables, delayed effects from the second post testing indicated that the treatment group, when compared with the control group, continued to show a marked and statistically significant decrease in irrational personality traits ($F=18.81$, $p<.01$) and also showed a marked and statistically significant decrease in intra-interpersonal needs ($F=9.05$, $p<.01$). Although the magnitude of the F ratio for trait anxiety was significant at the .05 level ($F=5.87$), it did not meet the level of significance defined for the experiment. Sixty percent of the experimental group still indicated a drop of one standard deviation or more on the IPTIS, 43.4% dropped one standard deviation or more on the STAI, and 50% dropped one standard deviation or more on the SNQ (see Table XII). Eighteen percent of the control group dropped one standard deviation or more on the IPTIS, 25% dropped one standard deviation or more on the STAI, and 17.9% dropped one standard deviation or more on the SNQ.

Graphs I, II, and III show the mean scores of the experimental and control group on the three dependent variables over the three testing occasions.

Insert Graphs I, II, and III about here

Whereas the control group shows relatively little change on the average over the three testing occasions, the graphs clearly illustrate significant changes on the average for the experimental group.

DISCUSSION

It is evident from the data reported that the thirty students who participated in Project SELF experienced change and this change is significant both statistically and in the case of two of the variables from a practical standpoint. The experimental group, when compared with a control group, showed a marked reduction, on the average, on two of the three dependent variables: irrational personality traits and intra-interpersonal needs. Also, a large proportion of the students dropped one standard or more on each of the three dependent variables. Furthermore, the evidence suggests that the reduction appears to be lasting over time.

Of particular importance is the nature of this change. The evidence presented seems to indicate that the students experienced a cognitive (IPTIS, SNQ) and emotional (STAI) change. This is consistent with what Maultsby (1971, 1975) and Spielberger (1972, 1975) would predict.

Cognitively, the participants are less irrational in their beliefs about themselves, others, and their environments. They express fewer irrational concerns. Emotionally, they have lowered their propensity to act anxiously in situations which appear ego threatening.

Acceptance of these findings is dependent on what Wilde (1972) has termed the "inventory premise"--the assumption that people are willing and able, to correctly describe their own feelings and behavior. Furthermore, the generalizability of these findings is somewhat limited by the possible interaction of testing and the treatment and by the size of the population to which statistical inferences can be made (n=238). The study also does not address the important question as to how these evidenced cognitive and emotive changes on the part of the subjects will be manifested in their future actions. It could be argued, however, that if a person looks more favorably upon himself and his environment, is generally less anxious, and has fewer irrational concerns, then the probability that he will act more rationally will be enhanced.

CONCLUSION

In summary, the evidence seems to indicate that the thirty subjects who participated in Project SELF are viewing themselves on the average, as more rational human beings and are better prepared mentally to cope more rationally within their present interpersonal environments. Whether they have chosen to act more rationally in their environment is a question not answerable from the data collected and reported in this study. Future research should address this question.

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TABLE I SUMMARY OF THE UNIVARIATE ANALYSIS OF COVARIANCE FOR THE DEPENDENT VARIABLE IRRATIONALITY TRAIT (IPTIS) --FIRST POST TEST

Source	Prop. of Variance	ss	df	ms	F
Covariate					
$R^2_{y.1}$*	.0805	22697.78	1	22697.78	
Treatment (after adjustment)					
$R^2_{y.12} - R^2_{y.1}$	.3081	86834.19	1	86834.19	28.72**
Error ***					
$(1-R^2_{y.12})$	.6114	172322.75	57	3023.21	
Total	1.0000	281854.72	59		

*y = dependent variable 1 = covariate 2 = coded vector for treatment

** Alpha $<$ .01

*** Test for homogeneity of regression coefficients (F test for interaction) was not statistically significant.

TABLE II SUMMARY OF THE UNIVARIATE ANALYSIS OF COVARIANCE FOR THE DEPENDENT VARIABLE TRAIT ANXIETY (STAI) -- FIRST POST TEST

Source	Prop. of Variance	ss	df	ms	F
Covariate					
$R^2_{y.1}$*	.2037	1063.84	1	1063.84	
Treatment (after adjustment)					
$R^2_{y.12} - R^2_{y.1}$	.0722	377.27	1	377.27	5.69**
Error***					
$(1-R^2_{y.12})$	.7241	3782.14	57	66.35	
Total	1.000	5223.25	59		

*y = dependent variable 1 = covariate 2 = coded vector for treatment

** Alpha $<$ .05

*** Test for homogeneity of regression coefficients (F test for interaction) was not statistically significant.

TABLE III SUMMARY OF THE UNIVARIATE ANALYSIS OF COVARIANCE FOR THE DEPENDENT VARIABLE STUDENT NEEDS (SNQ) -- FIRST POST TEST

Source	Prop. of Variance	ss	df	ms	F
Covariate					
$R^2_{y.1}$*	.0936	2319.96	1	2319.96	
Treatment (after adjustment)					
$R^2_{y.12} - R^2_{y.1}$	.0724	1794.44	1	1794.44	4.95**
Error ***					
$(1-R^2_{y.12})$	.8340	20660.35	57	362.46	
Total	1.000	24774.75	59		

*y = dependent variable 1 - covariate 2 - coded vector for treatment

** Alpha $<.05$

*** Test for homogeneity of regression coefficients (F test for interaction) was not statistically significant.

Table IV

First Post Test Means and Standard Deviations for the Experimental and Control Group on the IPTIS, STAI and SNQ After Treatment Intervention

	IPTIS		STAI		SNQ	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Experimental n=30	260.57	59.45	35.20	9.05	92.97	24.17
Control n=28	332.33	59.45	39.30	9.45	103.20	14.70

Table V

Adjusted First Post Test Means and Standard Errors for the Experimental and Control Groups on the IPTIS, STAI and SNQ

	IPTIS		STAI		SNQ	
	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error
Experimental n=30	258.21	10.06	34.73	1.49	92.60	3.48
Control n=28	334.68	10.06	39.77	1.49	103.56	3.48

Table VI

Percentages of Scores of the Experimental Group Dropping One Standard Deviation or More as Compared With the Control Group First Post Test

	n	IPTIS	STAI	SNQ
Experimental	30	70%	46.6%	43.3%
Control	30	6%	16.6%	30.0%

TABLE VII SUMMARY OF THE UNIVARIATE ANALYSIS OF COVARIANCE FOR THE DEPENDENT VARIABLE IRRATIONALITY TRAIT (IPTIS) - SECOND POST-TEST

Source	Prop. of Variance	ss	df	ms	F
Covariate					
$R^2_{y.1}$*	.0833	19089.05	1	19089.05	
Treatment (after adjustment)					
$R^2_{y.12} - R^2_{y.1}$	.2323	50219.37	1	50219.37	13.81**
Error***					
$(1-R^2_{y.12})$	.7677	146822.56	55	2669.50	
Total	1.0000	216130.93	57		

*y = dependent variable 1 = covariate 2 = coded vector for treatment

** Alpha < .01

*** Test for homogeneity of regression coefficients (F test for interaction) was not statistically significant.

TABLE VIII SUMMARY OF THE UNIVARIATE ANALYSIS OF COVARIANCE FOR THE DEPENDENT VARIABLE TRAIT ANXIETY (STAI) - **SECOND POST-TEST**

Source	Prop. of Variance	ss	df	ms	F
Covariate					
$R^2_{y.1}$*	.2558	1273.02	1	1273.02	
Treatment (after adjustment)					
$R^2_{y.12} - R^2_{y.1}$	.0717	357.11	1	357.11	5.37**
Error***					
$(1 - R^2_{y.12})$	.6725	3345.93	55	60.83	
Total	1.000	4976.06	57		

*y = dependent variable 1 = covariate 2 = coded vector for treatment

** Alpha $<$ .05

*** Test for homogeneity of regression coefficients (F test for interaction) was not statistically significant.

TABLE IX SUMMARY OF THE UNIVARIATE ANALYSIS OF COVARIANCE FOR THE DEPENDENT VARIABLE STUDENT NEEDS (SNQ) - SECOND POST-TEST

Source	Prop. of Variance	ss	df	ms	F
Covariate					
$R^2_{y.1}$*	.1070	2646.42	1	2646.42	
Treatment (after adjustment)					
$R^2_{y.12} - R^2_{y.1}$	.1262	3119.23	1	3119.23	9.05**
Error***					
$(1-R^2_{y.12})$	.7668	18962.92	55	344.78	
Total	1.000	24728.62	57		

*y = dependent variable 1 = covariate 2 = coded vector for treatment

** Alpha < .01

*** Test for homogeneity of regression coefficients (F test for interaction) was not statistically significant.

Table X

Delayed Post-Test Means and Standard Deviations for the Experimental and Control Group on the IPTIS, SNQ and STAI After Treatment Intervention

	IPTIS		STAI		SNQ	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Experimental (n=30)	265.33	63.81	34.73	9.68	87.13	21.26
Control (n=28)	322.07	43.64	38.82	8.66	101.18	18.02

Table XI

Adjusted Delayed Post-Test Means and Standard Errors for the Experimental and Control Groups on the IPTIS, SNQ and STAI

	IPTIS		STAI		SNQ	
	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error
Experimental (n=30)	264.25	9.44	34.29	1.43	86.82	3.39
Control (n=28)	323.25	9.77	39.28	1.48	101.51	3.51

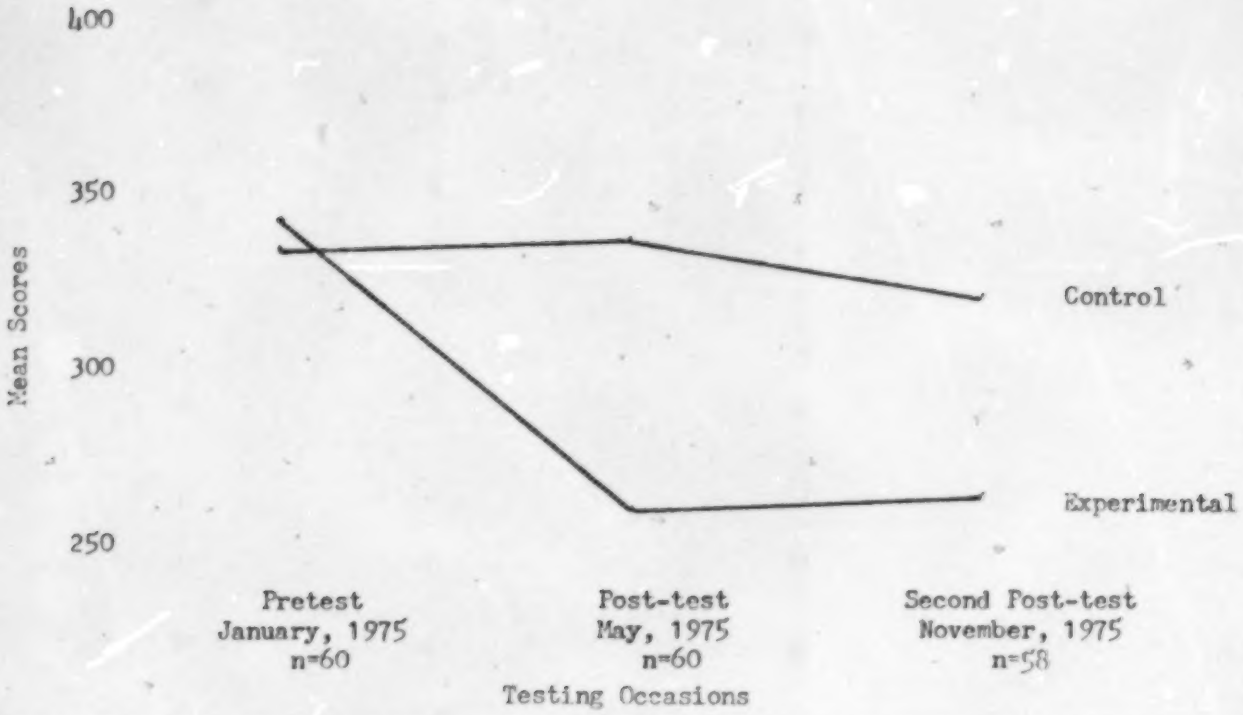
Table XII

Percentages of Scores of the Experimental Group Dropping One Standard Deviation or More as Compared With the Control Group Second Post Test

	n	IPTIS	STAI	SNQ
Experimental	30	60%	43.4%	50%
Control	28	17.9%	25%	17.9%

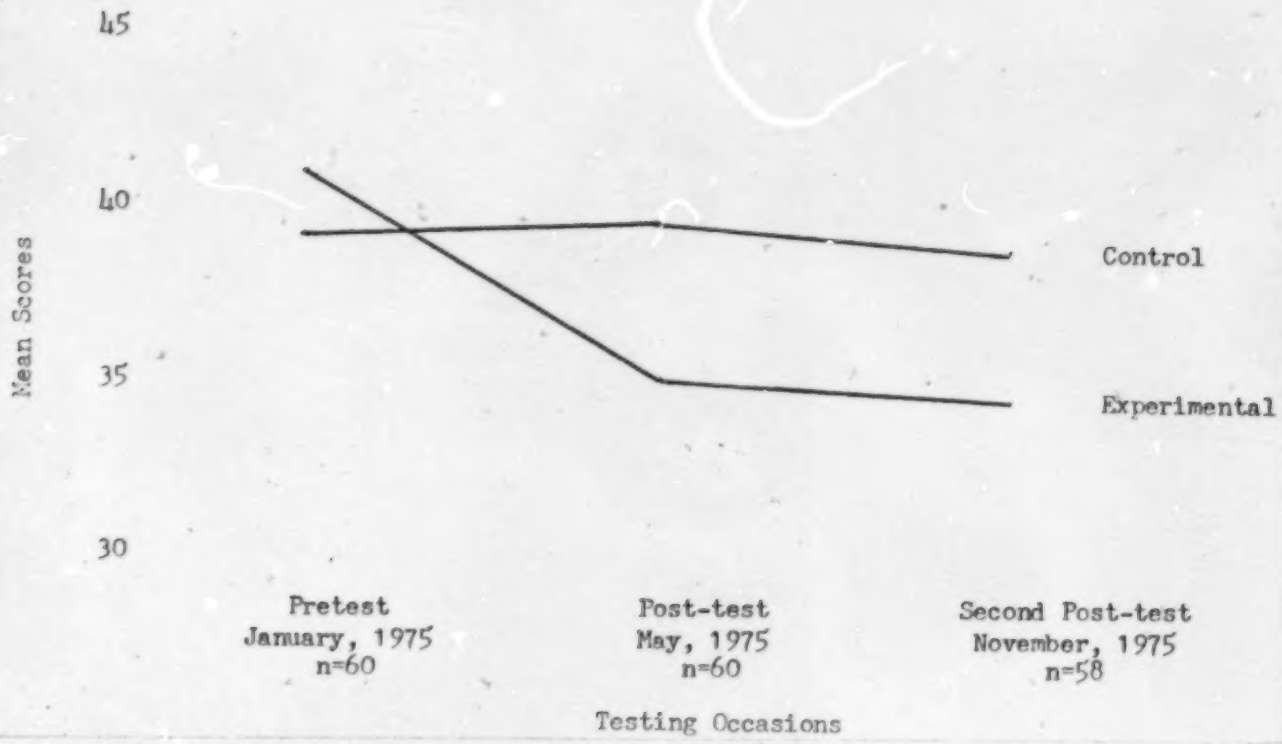
Graph I

Graph Comparing MEAN Scores of Experimental and Control Group on IPTIS over Three Testing Occasions



Graph II

Graph Comparing MEAN Scores of Experimental and Control Group on STAI over Three Testing Occasions



Graph III

Graph Comparing MEAN Scores of Experimental and Control Group on SNQ Over Three Testing Occasions